

In the Claims

## Claims 1-6 (Cancelled)

Claim 7 (Currently amended): A method for sequencing a polynucleotide, comprising the steps of:

- (i) reacting an isolated target polynucleotide with ~~an immobilised~~ a helicase enzyme or a primase enzyme, under conditions suitable for enzyme activity, wherein the enzyme is immobilized on a solid support;
- (ii) applying radiation to the reaction of step (i); and
- (iii) detecting the interaction between the enzyme and the nucleotide on the target polynucleotide, to thereby determine the sequence of the target polynucleotide, the detection being carried out by measuring a change in, or absorption of, the applied radiation that occurs during the interaction.

Claim 8 (Previously presented): The method, according to claim 7, wherein the radiation is electromagnetic.

Claim 9 (Previously presented): The method, according to claim 7, wherein step (ii) comprises using surface plasmon resonance.

Claim 10 (Previously presented): The method according to claim 7, wherein step (ii) comprises using nuclear magnetic resonance.

Claim 11 (Previously presented): The method, according to claim 8, wherein step (ii) comprises using surface plasmon resonance.

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Claim 12 (Previously presented): The method, according to claim 8, wherein step (ii) comprises using nuclear magnetic resonance.

Claim 13 (Cancelled)

Claim 14 (Currently amended): A method for sequencing a polynucleotide, comprising the steps of:

- (i) reacting an isolated target polynucleotide with ~~an immobilized~~ a helicase enzyme and ~~an immobilized~~ a primase enzyme under conditions suitable for enzymic activity, wherein the enzymes are immobilized on a solid support;
- (ii) applying radiation to the reaction of step (i); and
- (iii) detecting the interaction between the enzymes and the nucleotide on the target polynucleotide, to thereby determine the sequence of the target polynucleotide, the detection being carried out by measuring a change in, or absorption of, the applied radiation that occurs during the interaction.

Claim 15 (Previously presented): The method, according to claim 14, wherein the radiation is electromagnetic.

Claim 16 (Previously presented): The method, according to claim 14, wherein step (ii) comprises using surface plasmon resonance.

Claim 17 (Previously presented): The method according to claim 14, wherein step (ii) comprises using nuclear magnetic resonance.

Claim 18 (Previously presented): The method, according to claim 15, wherein step (ii) comprises using surface plasmon resonance.

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Claim 19 (Previously presented): The method, according to claim 15, wherein step (ii) comprises using nuclear magnetic resonance.

Claims 20-21 (Cancelled)

Claim 22 (Previously presented): A method for sequencing a polynucleotide, comprising the steps of:

- (i) reacting an isolated target polynucleotide with an immobilized helicase enzyme under conditions suitable for enzyme activity;
- (ii) applying radiation to the reaction of step (i); and
- (iii) detecting the interaction between the helicase enzyme and the nucleotide on the target polynucleotide, to thereby determine the sequence of the target polynucleotide, the detection being carried out by measuring a change in, or absorption of, the applied radiation that occurs during the interaction.